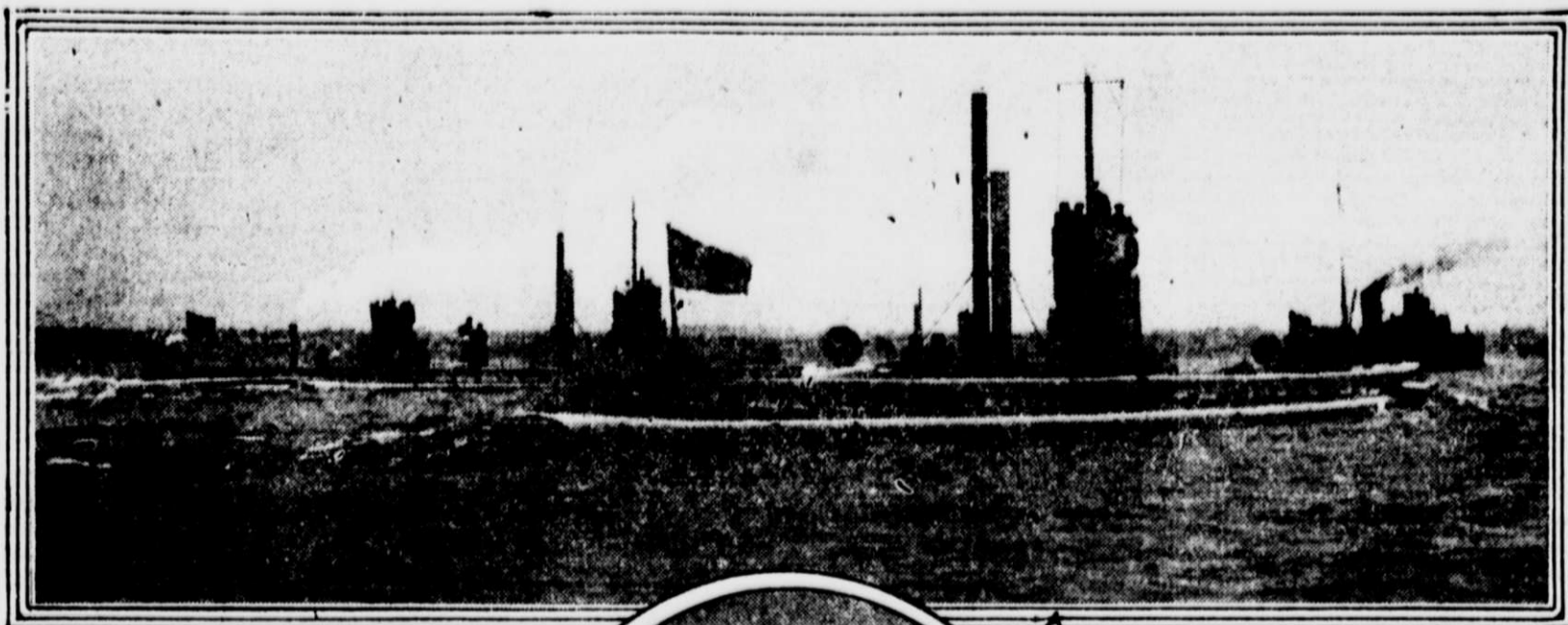


VICTORY OF SUBMARINES PROVE THEIR EFFECTIVENESS IN ACTUAL WARFARE



Fleet of German submarines at full speed.

Much of the Attacking Power of the Dreadnought Discounted by Demonstrated Efficiency of Under Water Craft of British and German Navies—How the Crews Are Trained

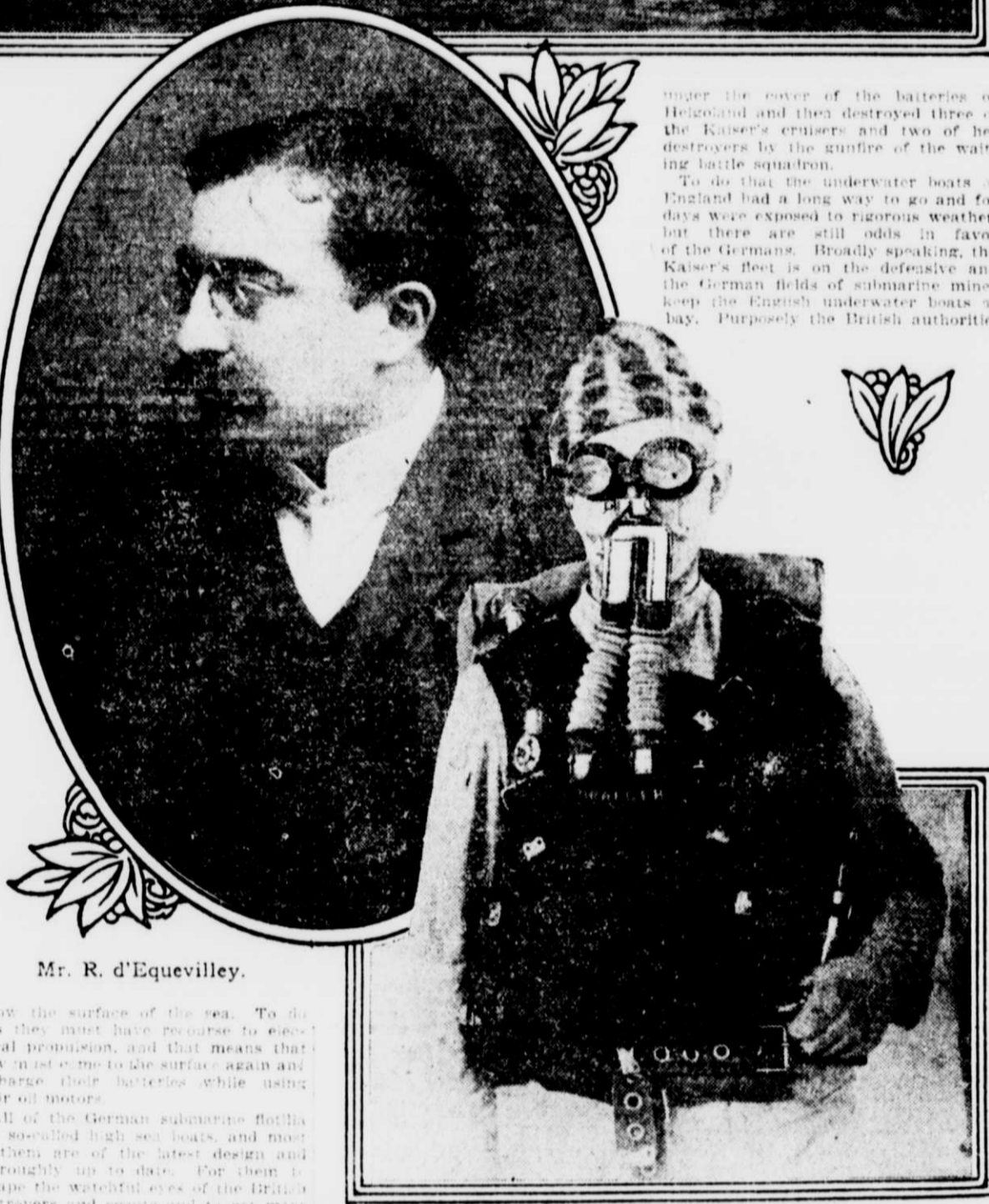
THE submarine has demonstrated its power as a naval weapon. The 6th of September, 1914, will long be remembered as the day when this modern under water craft first proved its efficiency, for on that day one of the German flotilla sent the British scout cruiser Pathfinder to her doom.

But success was not one sided, and before that day closed a boat of the U class of submarine incalculably exposed her conning tower in the mist of seven British warships and ere she could dive again her body was shattered and down she plunged like a broken bottle. However, the strategical sacrifice of the submarine was a fortunate one compared with the cruiser which one of her companions had previously destroyed.

Seven days later the British scored in kind by way of retaliation when the big submarine E-9 caught the German cruiser Hela unawares and sank her off Wilhelmshaven. But the German commanders of these new weapons of naval warfare were apparently inspired to still greater deeds of daring. In one-two-three order the Kaiser's submarines nine days later sent three of England's armored cruisers to the bottom, and while the ships themselves were nearly obsolete as battle craft, the toll of life amounting to more than 1,500 men, is a blow that must long be felt in the British navy, while it may greatly affect the morale of the entire service afloat.

The German submarines have accomplished in fact the very thing for which they have been zealously and secretly preparing for a long time. According to the news accounts, the three cruisers Aboukir, Cressy and Hogue were sunk at a point north and west of the Hook of Holland, and it is this fact that has great significance for the British fleet.

Undoubtedly these German submarines have operated from a base at Heligoland. Now Heligoland is approximately 250 miles north of the Hook of Holland and this gives an idea of the working radius of the German boats, which must have fuel enough in store to carry them that distance and take them back to their base again. Some of these boats have a cruising radius at reduced surface speed of possibly 2,000 miles, but it must be remembered that in time of war they would probably make stretches of a run like that to the neighborhood of the coast of Holland



Mr. R. d'Equevilley.

below the surface of the sea. To do this they must have recourse to electrical propulsion, and that means that they must come to the surface again and recharge their batteries while using their oil motors.

All of the German submarine flotilla are somewhat high sea boats, and most of them are of the latest design and thoroughly up to date. For their escape the watchful eyes of the British destroyers and scouts and to get more than two hundred miles away from Heligoland and right into the cruising field of the English fleet is evidence of the capacity of the Kaiser's submarines and the quality of the men in charge of them. If they can cover such a sea stretch, what is to prevent their venturing further in a mood of desperate determination to deal their prime maritime foe a still heavier blow?

The British public generally, not so mention most of his naval brethren, derided Sir Percy Scott recently when he said that the submarine had sounded the death knell of the dreadnought.

The German emergency breathing and safety apparatus for submarine crews.

And yet to-day some measure of the truth of his prophecy is apparent. True, the British submarines are probably quite the equal of the rival German boats, and England actually has a greater number of them. Already the King's navy has shown what its own boats of this sort can do, because it was by means of submarines that the British lured the Germans out from

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lately been disclosed. In this manner of running they have unquestionably been immensely helped by the gyroscopic compasses of German make with which the vessels of the submarine flotilla have long been equipped.

The North Sea has been their favorite field for exercise, and the boats have been frequently sent from the mainland to Heligoland and back again when the weather was stormy. Each of these spectacular performances has been duly recognized, and in the most noteworthy cases the Kaiser has personally congratulated the commander and his crew.

So long as the submarine keeps below the surface of the sea she is safe from attack on the part of ordinary fighting ships. For purposes of observation the submarine need not expose any vital part of her body and the shooting away of her periscope merely blinds her in a measure. With this power of sight destroyed the boat can either go to the bottom, provided the depth does not exceed the pressure resisting strength of her hull, and rest there until the enemy has passed away, or she can dive, use her gyroscopic compasses and steal away submerged to the propulsive limits of her storage batteries. The destruction of her periscope need not of itself force her to come to the surface, nor would such an injury hurt her structurally.

Just what the submerged speed of the German boats may be is a German navy secret. It has been suspected that the vessels are so designed that they can use their oil-engines for submerged propulsion for limited periods in making a sudden dash or spurt.

The power of the oil motors is much greater than that of the electric drive using energy from storage batteries, but two drawbacks have hitherto hampered the employment of the explosive engine when running under water. First, the exhaust is apt to leave a long trail of bubbles upon the surface, clearly marking the path of the approaching boat, and second, the problem of supplying sufficient air for the engines under such circumstances is a serious one. These difficulties are not insurmountable, but a submarine that has so used up her supply of compressed air is like a runner at the end of his race, and the boat would have to come to the surface a short while afterward if she had recourse to this emergency manoeuvre.

This possibly explains some of the rather remarkable performances of the Kaiser's submarines during the various war games in the North Sea and, too, probably accounts for the manner in which one of the U class was forced to the surface after the Pathfinder was sunk. She came there to breathe, so to speak, and we know the penalty the British guns exacted.

All of the German boats are equipped with a special form of safety helmet and emergency breathing apparatus and each member of the crew is so provided. Primarily, these devices are designed to facilitate escape from the boat should the vessel sink and the air become foul by the compartments flooded. But it is quite within reason that men of courage bent upon doing a daring deed would willingly don these helmets in order that the last breath of good air in the craft might be turned into the engines to accomplish the end desired, thus enabling them to escape unobserved within a few striking distance of the foe.

The German submarines owe their inception to a Spanish subject, R. d'Equevilley, born in 1873 and later educated in France. M. d'Equevilley began the building of submarine boats in 1902 by the construction of the Borelle for the Russian Government. In 1905 he presented plans to the French Admiralty and even worked for a while, so it is said, in the French Ministry of Marine and in that department devoted particularly to the development of underwater craft.

The authorities, however, gave him no substantial encouragement, and accordingly he took his designs to Germany and laid them before the experts of the great Krupp works. The result was a combination which, for a time, stirred up a veritable hornet's nest in France, because it was charged that this Spanish subject had learned all about Engineer Lebaube's submarines and was fully advised as to the best of French practice. This attack was declared to have been quite unjustified.

However, he undoubtedly had all of the essentials of a good submarine in his designs, and from the very first boat, the U-1, the so-called Krupp underwater craft have been of a distinctly superior order, otherwise the Kaiser's flotilla could not have done the things that stand to their credit. U-5, which Berlin gave the credit of sinking the three British cruisers, is not a new boat as the term applies in the art of submarine navigation to-day. Built four years ago and having a surface speed of thirteen knots, she is inferior to the latest of the German underwater boats.

What may not be done by her larger sisters when the German strategists see fit to send them abroad in the North Sea and elsewhere in the waters adjacent to the British Islands and the French coast? The Germans are playing a strictly defensive game with their navy, and if they can cripple the heavy battle line of their foes at the expense of the occasional loss of a little submarine, then they may be able to lessen the disparity of forces and make their own dreadnoughts and armored ships correspondingly more potent factors in the final decisive encounter.

Germany enjoys a certain advantage in this particular field of naval architecture. She has two shipyards, one the State establishment at Danzig and the other the Krupp plant at Kiel, known as the Germania works. For several years the Imperial Danzig dockyard has specialized exclusively in the construction of submarines, and it is said that there are at least twelve slips for the building of submarines, and it is said that nearly the same facilities exist at the Kiel establishment.

This not only makes for speed of construction, but it also contributes to the perfection of the product, because the art calls for expert knowledge and special facilities in the building. The submarine in its setup bears about the relation to a battleship in mechanical nicety that a high priced chronometer does to an ordinary 50 cent alarm clock.

It is said that the three British cruisers went to the bottom because they were not prepared as modern ships to resist the assault of automobile torpedoes. This is true, and it is a fact that modern dreadnoughts have internal armor which is designed to confine the explosive effects of both mines and torpedoes, but the provision is only a part way help and not an effectual check.

Of course there is the defence of the torpedo net, but this safeguard can be used wisely only when a ship is at anchor, and the Germans are on the lookout for battle craft in motion. In order to make their blows more telling the Kaiser's ordnance experts have, within the past year or two, evolved an extremely formidable torpedo having a

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Once again Mme. de Thebes's prophecy proved to be correct, for the United States has not been drawn into war with Mexico.

Those affected by the high cost of food will agree that Mme. de Thebes was right when she predicted that "farmers will receive high prices for wheat and corn." Apparently Mme. de Thebes did not foresee that the war in which France was to be involved would seriously interfere with the shipping of the world. At least she did not predict that it would affect the United States, because she issued this warning to America: "Do not sell your wheat and corn to Europe. It will be needed at home, because the seasons will not remain in their place."

Now that Mme. de Thebes's prestige has been increased by her prophecy in regard to France, it is interesting to know that she foresaw the fatal accidents and the failure of the exhibition of 1900. She predicted the death of King Humbert, and cautioned the Marquis de Mores not to go to Africa. She has read the hands of kings, princes, diplomats, generals, ministers, parliamentarians, great ladies, workers, speculators, manufacturers, actresses and jockeys.

It is also interesting to learn how she acquired her popularity. Many years ago Alexandre Dumas, the novelist, invited a dozen psychologists and physiologists to dinner one evening.

In an adjoining room sat a young woman and after the dinner the twelve men of science were requested to go into the room by Mr. Dumas and have the young woman read their palms. One by one the men entered, and the painter read their hands so successfully that an account of the seance was published a few days later by the enthusiastic Dumas, giving all the details. Mme. Thebes's success was assured.

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